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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/881,741	06/18/2001	Christopher Gordon Gervase Turner	02814.0051	8760

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EXAMINER
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LINNENKAMP, NICHOLAS L

ART UNIT	PAPER NUMBER
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2635

DATE MAILED: 12/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/881,741

Applicant(s)

TURNER ET AL.

Examiner

Nicholas L Linnenkamp

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 6/18/2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear as to the dependency of claim 10 on claim 9, as claim 9 recites the use of three different antennas for possible use on claim 8 and claim 10 recites an additional type of antenna for use (Hybrid Dipole See US 6,346,922 B1) on claim 9. It is not disclosed in the specification how the three types of antennas described in claim 9 could also comprise the antenna elements found in claim 10. It is generally understood that applicant desired to have claim 10 directly modify claim 8 and provide for an additional type of antenna for use with claim 8.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5, 7,8, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Skeie et al. (heretofore Skeie).

In reference to claim 1, Skeie teaches of a transponder for an electronic radio frequency identification system (Col 1, lines 23-30) comprising

- An antenna (Fig 8, 156) having an antenna impedance at a feed point thereof. (Feed point shown as a circle attached to the antenna 156 connected through lines 160 attached to poles of antenna).
- An electronic circuit (Fig 2, 40) having an input impedance at an input thereof (S1), the input being connected to the feed point.
- The antenna impedance having impedance characteristics for developing first and second voltage maxima across the input at first and second frequencies respectively, thereby to provide a continuous operative frequency band for the transponder including the first and second frequencies. (Fig 14 represents the frequency band in which transponder operates in, showing first frequency at 905 MHz and second frequency at

925 MHz, in addition providing continuous operative frequency band between the two frequencies).

In reference to claim 2, claim 1 is taught as above. Skeie teaches that the input impedance comprises a real component and a capacitive reactive component. (Col 13, lines 9-23).

In reference to claim 3, claim 2 is taught as above. Skeie teaches that an inductive element is connected between the antenna and the circuit in parallel with the input impedance and which is operative to resonate with the capacitive component of the input impedance (Figs 15A, 15B, and 17; Col 13, lines 23-54).

In reference to claim 5, claim 1 is taught as above. Skeie teaches that the first frequency is between 850MHz and 900MHz and the second frequency is between 900MHz and 1Ghz. (Fig 14 represents the frequency band in which transponder operates in, showing first frequency peak at 900MHz and second frequency at 930). It is clear that the frequencies chosen by Skeie are designed to stay closely within the 905-925MHz ISM band (Col 2, lines 1-4) and that alternate frequencies could have been selected through different geometries.

In reference to claim 7, Skeie teaches claim 1 as above. Skeie teaches that a dipole antenna can be attached to the transponder. It is well known in the art that dipole antennas can be tuned to a specific frequency by adjusting the length of the antenna's poles. Skeie also teaches that transducers can be tuned by adjusting the position of the lines wires according to the wavelength of the tuning frequency (Figs 10, 11).

In reference to claim 8, Skeie teaches that antenna (156) for a transponder in an electronic identification system with the antenna having an impedance at a feed point (All antenna have an impedance) and the antenna impedance having impedance characteristics for developing first and second voltage maxima at first and second frequencies respectively across an input impedance of the transponder. As seen by Skeie and disclosed above, antenna and transducer have impedance characteristics for developing first and second voltage maxima shown in Fig 14 which would have appeared across the transponder.

In regards to claim 11, claim 1 is taught as above. Skeie teaches of an electronic radio frequency identification system comprising a reader and at least one transponder as claimed in claim 1 (Col 1, lines 56-63).

Thus Skeie teaches all the limitations of claims 1-3, 5, 7, 8, and 11.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 4 is rejected under 35 U.S.C. 103(a) as being obvious over Skeie in view of Proctor et al. (heretofore Proctor).

The applied reference has common inventors with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Skeie teaches claim 2 as above. Skeie teaches how to select the real component (resistive) of the input impedance to match the real component of the

resistance in the antenna in order to maximize the energy coupled into the device, thus reducing the loss ratio (Col 14, lines 1-3). Skeie does not teach what value the input impedance takes on due to the device substrate but suggest that the values of the input impedance and antenna impedance play a significant factor in the power response of the transponder (Col 14, lines 8-12). Proctor suggests that transponder should have a high input impedance and that a directly connected antenna have a matched high input impedance (Abstract). In addition, Proctor suggests that transponder should have an input impedance greater than 400 Ohms (Col 1, lines 50-55).

It would have been obvious to one skilled in the art at the time of invention to combine the teachings of Skeie with that of Proctor because Skeie teaches a passive radio frequency identification system and Proctor suggest using a high impedance transponder. In addition, Proctor suggests that the inhibiting factor is the voltage required on the capacitor to provide the power to the transponder (Col 1, lines 35-37) and that having a high input impedance improves the retrieved voltage (Col 1, lines 55-59).

Claims 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skeie in view of Schober and Iwasaki.

In reference to claim 6, claim 1 is taught as above. Skeie teaches that a dipole antenna can be used in conjunction with transducer/transponder. Skeie does not teach of using other types of antennas with transducer/transponder. Schober suggests using patch and loop antennas in a backscattering transponder (Col 4, lines 12-13). Iwasaki



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suggests using a short-circuit ring patch antenna (Figs 2 and 3). It would have been obvious to one skilled in the art at the time of invention to combine the teachings of Skeie with the suggestions of Schober and Iwasaki because it is well known that different geometries of antenna have unique RF propagation properties and a skilled artisan would choose the antenna geometry that best suits the application being worked on.

In reference to claim 9, claim 8 is taught as above. Claim 9 is taught similar to claim 6.

Thus, Skeie, Schober, and Iwasaki teach all the limitations of claims 6 and 9.

Claim 10 is rejected under 35 U.S.C. 103(a) as being obvious over Skeie in view Schober and Iwasaki and further in view of Proctor et al. (US 6,346,922 B1).

The applied reference has common inventors with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is

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the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(I)(1) and § 706.02(I)(2).

In reference to claim 10, claim 8 is taught as above. Skeie does not teach of using a loop antenna that comprises a first loop and an appendage to the first loop wherein the appendage comprises a second loop linked to the first loop. Proctor suggests two loops connected by an appendage with the antenna attached to the transponder (Abstract). It would have been obvious to one skilled in the art at the time of invention to combine the teachings of Skeie with the suggestions of Proctor because Proctor suggests that the Hybrid antenna (double loop with connecting appendage) will reduce the negative effects of linear dipole antennas and loop antennas (Col 1 lines 21-36). In addition, Proctor suggests that his invention be used with other passive transponders as well as active transponders.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicholas L Linnenkamp whose telephone number is (703) 305-8701. The examiner can normally be reached on 8:00-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik can be reached on (703) 305-4704. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4750.

Nicholas L Linnenkamp  
Examiner  
Art Unit 2635

NLL

MICHAEL HORABIK  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600

A handwritten signature in black ink, appearing to read "Michael Horabik", with a long horizontal line extending to the right.